long, 1½ broad, spongy, hooked at end; seed 1½ inch long, egg-shaped, compressed, free from the scale, apparently not winged; whether dicœcious or not, not known. Ripens seed in January, when the natives collect from great distances to feed on it. It is said there is also another species, but I have not seen it.—H. Bidwill.

Note on Nuytsia floribunda.

In the government garden at Sidney is a single plant of *Nuytsia*, which flowers every year, but does not ripen many seeds. I this year picked up several and sowed them, but they have not come up. As I was particularly anxious to preserve the plant, I invariably looked around it for seedlings whenever I entered the garden, and a few days since discovered two just breaking the ground. I then found that this curious plant has three (!) cotyledons, which are awl-shaped and perfectly equal in size and appearance. As I never recollect to have heard of a plant with three cotyledons before, I thought it worth mentioning, in order to compare it, if possible, with *Schœpfia*, *Gaiadendron*, *Aucuba*, &c., the other terrestrial genera of (so-called) *Loranthaceæ*. I should like to know if it is to be found in English collections*.—H. B.

Sidney, July 5, 1841.

LV.—*Information respecting Scientific Travellers.*

Some account of the Natural History of the Island of Chedooba, from the Report of Edward P. Halstead, Esq., Commander of Her Majesty's Sloop Childers†.

The island of Chedooba measures 15½ miles in length, viz. from 18° 40′ to 18° 55′ 30″ N. latitude, and 17 miles in width, viz. from 93° 30′ to 93° 47′ E. longitude, and shows on the map as a square the S.W. angle of which has been reduced. With its dependency of Flat Island on the south coast, it covers an area of about 200 square miles. Its general appearance and character is that of a fertile, well-wooded island of moderate height and irregular outline. A band of level plain, but little raised above the sea, extends around its coasts, of far greater width on the east than on the west; within this lie irregular, low, undulating hills, varying in height from 50 to 500 feet, enclosing several higher detached mounds, of steep, well-wooded sides, the loftiest of which, near the south part of the island, rises nearly 1400 feet.

The view from the top of these higher summits presents, imme-

* On reference to Mr. Loudon's 'Arboretum et Fruticetum Britannicum,' it appears not to have been as yet introduced.—Ed.

† From the Journal of the Asiatic Society of Bengal, No. cxiii.

diately below, a scattered irregular mass of hills, confined principally to the western part of the island, covered with jungle, interspersed with grass plains of more or less extent. To the eastward a broad flat plain intersected with patches of jungle; and surrounding all, lie the cultivated rice-fields with the different villages on their verge nearest the sea, the coast of which to the westward is everywhere strewed with broken and detached masses of rock jutting far out.

In introducing to notice the more natural productions of the island, in the vegetable kingdom, it may be well first to speak of the soil in which they are found.

This is with little exception of one character, a loose friable earth of light yellow colour, having the general clay base much modified with decayed vegetable matter, the angular fragments of soft sandstone having passed from a greenish into a dirty yellow colour, and being in a state of rapid decomposition.

The exceptions to this were found in a few spots to consist of a soil bearing more of the character of mould. The above soil extends throughout the interior parts of the island, embracing all the hills higher and lower down to those flatter lands which have been noticed as applicable for the extension of rice cultivation, and constitutes that of the jungles, which are co-extensive with it.

These in their general character are open, consisting much of detached clumps of bamboo or of trees from 1 foot to 18 inches in diameter, well separated below, but in their branches having creepers thickly entwined. Throughout the lower jungles, open spaces, some deserving the character of small plains, are of very frequent occurrence. On the higher hills the trees are closest of growth and largest of size, but still clear of understuff.

Timber of great size, and some of valuable quality, is to be found, but it is confined to the very summits of the highest hills, and is therefore partly inaccessible, nor would its amount ever remunerate the labour of constructing roads for its transport. The soil in which these grow is of the same nature as that described above; but within a few hundred feet of the summits, all of which are very steep, it is piled up in the loosest possible manner. The stroke of an axe or dáh on an extensive hill-top would so shake it for a space of 150 yards around, as to make observation in the quicksilver of an artificial horizon impossible.

Precisely at the spot where this loose texture commences—commences the growth of the large timber, increasing in size thence to the summits, and from the trees not being deciduous (or at least not so at the same season), a most marked line of separation is thus traced out between these and the smaller leafless jungle below.

The wood oil-tree was the most conspicuous in growth and size of the larger trees of these summits. One was felled on the west hill, which measured in diameter at the respective ends of a 60-feet length, 4 feet 6 inches and 3 feet 6 inches; and another is left standing as a mark, on the summit, which measures 21 feet 4 inches in girt at 6 feet from the ground. The wood of this tree will not, I

fear, be found valuable as timber, but its produce, the wood oil, has yet to be better appreciated than at present. This substance is produced by cutting a hole into the body of the tree* and kindling a fire in it; the flat floor, as it were, of the hole has a groove cut in it, which receives the oil as it exudes from the wound, and whence a split bamboo conducts it to the pots placed for its reception; the quantity thus yielded from a large tree is surprisingly great. In felling the above-mentioned individual the oil ran in a stream from it, and it must have contained even tons. The strict propriety of designating it an oil may be doubted. It has always seemed to me more like a varnish; it speedily forms a highly polished surface on wood work, and has a fine aromatic scent, not unlike that of cedar; mixed with reeds and dried, it makes a brilliant and fragrant torch. The colour of the wood is a dull pink.

In the course of clearing these summits for observations connected with the survey, many other trees were felled exhibiting characters apparently valuable as timber. Among the natives there were differences of opinion about their names, and waving even this obstacle to any description of them, the remark already made, of the difficulty opposed to their being brought down, renders such attempt unnecessary. The oil-trees would be found most valuable as a source of supply for that material, and perhaps many of their neighbours also would be found more useful living than dead by the produce they may be found to yield. One of these, of large size, and with a bark similar to cork, was found to produce caoutchouc in great abundance. On cutting through the outer rough coat, a soft inner one, nearly an inch thick, is found closely attached to the more solid wood; on wounding this, the caoutchouc exudes freely, of a consistency and colour like thick milk. The tree was much avoided by the natives on account of the noxious quality of this milk, which, if by accident entering the eye, on the tree being struck, so as to wound it, was said to produce certain blindness.

Another tree of very large leaf but moderate size was also much avoided, and great care taken in felling it to prevent its juice from touching the skin, which it was said to blister and poison. The adhesive quality of this substance was therefore more taken for granted than proved.

A plant, with the appearance of a *Cactus*, but growing to the height and size of a tree, and known perhaps generally under the name of *Sisso* (not the timber tree of that name), yielded the caoutchouc in the greatest abundance. On severing a leaf, it ran forth in a small stream like milk. Many of the creepers also contained it in large quantities, and in one spot of the jungle of the Krae-rone Circle, I found the Caoutchouc tree of South America, affording prospect, that, as European intelligence and enterprize became more attracted towards the products of India, that continent may some day find its exclusive trade in this every day increasing valuable article formidably disputed. The wild cotton tree grows to a great size, and at the time seen was covered with a mass of its beautiful

* See Dr. Spry's Visit to Arracan, No. 110.

crimson flowers and flocks of birds. Its wool is sometimes used for stuffing pillows or beds.

The Gamboge tree was found of large size, and in considerable quantity, in clearing the jungle from the summit of the N.W. Peak; it was well known to the natives; but no use is made of its beautiful gum, which covered the stems in considerable quantities. It lives in the higher jungles.

It is not doubtless the only tree in these wilds yielding a valuable gum, but want of acquaintance with botanical science prevented researches of that kind, which might have led to useful discovery. The safety and facility, and even enjoyment with which such researches may be carried on in the fine season, in the woods of Chedooba, seem however to point them out as a spot very eligible for the careful examination of an able botanist, unless indeed they be considered too limited in extent to exhibit a sample of the general character of the jungles of this coast.

A very brilliant crimson gum was found to flow in great quantity from a large creeper (Tallee-medzou-nowy) which is very common. If dried speedily in the sun, becoming very brittle, but retaining its colour; it is of very astringent quality, and is used in some diseases as a medicine by the native quacks.

I may not fail to mention another creeper, whose properties are as valuable as interesting, and not the less so from its being found everywhere, both high and low. It is truly a traveller's friend, and the wandering Mug well appreciates its value. With his dáh he cuts off a junk and quenches his thirst with its contents, a pure, tasteless, cool water, of which it contains as much as its large numerous pores will hold, and which are immediately emptied by holding the piece perpendicular. A piece about 2 feet in length, and as thick as a small wrist, gave rather more than half a pint of water. In the rainy season it would have given double that quantity.

In travelling through the jungles, the liquid of this water-creeper (Jabroon nony) is the constant beverage of the natives, when not otherwise supplied with that necessary, and its universal presence makes him very independent in his choice of road.

The rattan is everywhere found in the jungles, and performs all the ordinary duties of rope; it grows to a great size; two were taken from the West Hill 114 feet in length, and $1\frac{1}{2}$ inch diameter.

Although Chedooba may not be looked to for supplying valuable timber to other parts, yet for its own consumption, and most, if not all domestic purposes, it possesses amply sufficient to meet any demand. For such purposes plank may easily be brought down from the hill, whence the whole tree must be immoveable. The lower jungles contain woods perfectly adapted to such uses; and in those of the Eastern Plains was found the Thew-gaan growing plentifully, some of the trees between 2 and 3 feet in diameter, and which itself would supply material for almost all purposes. The wood of this tree is hard and close-grained, of a yellow colour and most durable. In the southern provinces of Tenasserim it grows to an immense size, and in the Sandoway district; hereafter its qualities may

be appreciated by other than the natives, with whom its durability has given rise to the proverb that 'a Cemoe of Thew-gaan lasts 99 years.'

Of the productions of the animal kingdom, the island exhibits but a limited variety.

Of wild animals, the deer is the largest and most plentiful; they are very numerous throughout the island, though I never either heard or saw but one species, that which is generally known as the 'barking deer.' The natives run them down with dogs; they have no means of shooting them. The flesh was found less dry and unflavoured than was expected.

Next in size and number to the deer is the wild hog, the only species on the island. They are not large, but numerous, especially in the jungles which lie closest to the rice lands, on which they commit heavy depredations, and our assistance was frequently invoked to destroy at least some of the enemy. But in general the labour of the day was deemed enough for our party without trenching on the hours of rest, which was necessary in order to comply with the request.

Jungle cats are found, but are not numerous; but one was ever seen by any of our party.

Squirrels are plentiful, and of large size, though of but one species; a dark brown in colour throughout, with exception of the throat, and a narrow stripe along the belly of yellowish white. One was shot of the size of a full-grown rabbit; it was a male; his lady in company was of more delicate size.

Monkeys we heard of, but I much doubt their existence on the island; at least it is strange, that in so long and extensive a traverse of it such an animal was neither seen nor heard.

The freedom from any formidable wild beast is a circumstance of advantage in these countries, which may not be passed over without remarks; it contributed largely to the comfort and freedom with which we were enabled to penetrate through the Chedooba, forming a source of congratulation when obliged to take up a night's lodging or a day's journey in the jungle.

The natives state that a tiger did once attempt a landing on the island, but fortunately being seen while yet swimming towards the shore, time was afforded to the inhabitants of the nearest village to prepare for his welcome; and before he could gain footing, either for attack or escape, he was cut in pieces with their dáhs, since which his example has never been followed.

I know not how far the swimming qualities of a tiger may bear witness to the truth of this story, but the feat in an opposite direction was safely performed by one of the elephants which were placed at our service, which, after breaking from his ropes, swam the straits, and landed safely on the opposite coast of Ramree, a distance of seven miles at the least, where he was recaptured and sent back.

Of reptiles, one snake was seen, and a few lizards and insects; the most numerous and beautiful are the butterflies, which were found even on the highest peaks. Bees are plentiful, but the jungles alone

supply the honey, which is very sweet and good, and serves throughout the island in the place of sugar.

Fish forms a very important part of the diet of the Mug, and mainly in this view are the villages of Chedooba formed around the shores. It is very plentiful, though not of any great variety. The most common is a species of Bonito, a muscular fish of rapid motion and great strength, though seldom arriving at a weight of 4 lbs. It has a very thick smooth skin, without scale, and is of silvery white, longitudinally spotted with blue. On the western coast, in the sandy bays, they are very numerous, and are taken in great plenty with hook and line.

The bamboo supplies the fishing-rod, and in the evening, when most readily taken, the shore may be seen with twenty natives in a line from the nearest village, as close together as they can stand, up to their middles in the water, with their baskets slung on their backs, and casting their lines as rapidly as if fly-fishing, laughing and joking at their success, without the least fear of driving their prey away, though they must be among their legs. The flesh of these fish is very firm and nutritious.

Very great quantities of a tiny little fish, most similar to, if not in fact, the Anchovy or a small Sardine, are taken on the same coast. They are dried in the sun without any preparation, a day or two's exposure being sufficient for the purpose, and exported in great quantities to Ramree and the neighbouring coast. The method of taking them is perhaps peculiar, and forms an interesting and lively scene. The morning is the time of the best 'take,' at which period, and when near high water, young and old assemble on the sand in groups, with flat open-mouthed baskets of bamboo work, awaiting the opportunity for a catch. This occurs when the shoals of tiny fish are driven for supposed safety close into the beach by their larger, persecuting, and ravenous brethren. Then away dashes the nearest group of expectants into the water, to the back of the surf which is constantly though not heavily rolling in on the coast, and, driving back the original pursuers, face round in shore and place the flat mouths of their baskets in line together, just outside the retiring wave, receiving from it its finny contents. Sometimes more than a gallon will be thus deposited in a single basket.

The uncertainty as to where the shoal will come in, and the rapidity and ability with which the fortunate group take advantage of their opportunity, afford all the excitement and amusement to these cheerful people of a game of chance, and cannot be looked on by a stranger without interest. Flocks of cranes, crows, kites and gulls, of many sizes, colours and voices, looking out for the stragglers on the sand that have escaped the mouths of the fishes and the baskets, form an addition to the scene.

The gray mullet, of good size and flavour, is got from the creeks of the east side of the island. Rock fish are plentiful, but not easily taken; when intended to be preserved, they are split into quarters, kept together at either end, and then opened by strips of bamboo, and the whole hung up to dry in the sun. Skate were frequently

seen, but none caught; they were often observed to make very high though clumsy leaps, a feat not often I believe practised by flat fish. A fish of considerable size, from twelve to twenty lbs. weight apparently, and in form resembling the salmon, was frequently seen of an evening performing very astonishing leaps. They were always quite perpendicular, and therefore appeared as a gambol, more than an effort to take prey, and sometimes extended to a height of thirty feet.

Of shell-fish we found craw-fish and prawns, the latter of great size and very delicious; they are limited to the creeks of the east side of the island, where also the one in the neighbourhood of the Meug-breng village possesses truly fine oysters. They are large, but of a flavour as delicate as our own Colchester luxury: it may be lamented that they are not more generally known, and attempts made to grow them elsewhere. They have been transported to Kyouk Phyoo, and do well there.

Turtle are common, and are taken by the natives on the sand-islands and bays. They are of large size and of good species, but I can make no mention of their quality as food.

Many beautiful and valuable species of shells are to be found on the flats off the North Point of the island, where however but little leisure or opportunity of dredging for them was afforded.

Of wild birds, the Sarus [Larus?] is perhaps the largest on the island, and is plentiful. They are common in other parts of India, and are, I believe, good eating. There are a great many varieties of the crane, some of very beautiful plumage and great size. These constitute the greatest portion of the feathered inhabitants, and would supply perhaps some new and valuable varieties, if not species: doves are very numerous; a small green parrot is found, and some few green pigeons were seen. But in general, other than have been mentioned, the birds are of those species most commonly met with in these climates. The jungles are, however, scantily peopled, though I may not omit to notice one which, with its sweet and soft note late in the evening, often gratified us, and was deemed not an unworthy brother-songster of the nightingale.

NIGER EXPEDITION:—DR. VOGEL.

Our readers will rejoice to learn that Dr. Vogel, Mr. Fraser, and Dr. Stanger are not among the victims of the fatal Niger expedition. Dr. Vogel has recovered from an attack of fever, and will remain for a time at Fernando Po, for the purpose of botanical investigation.

BIBLIOGRAPHICAL NOTICES.

On the Structure of the Cyst-worm. By George Gulliver, F.R.S. (Medico-Chir. Trans., vol. xxiv.)

In this memoir, after remarking the great importance of the Cyst-worm as one of the very few parasites that infest the muscular fibre of man, as well as that of animals used by him as food, the author proceeds to describe many points in the anatomy of the Entozoon